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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,682	07/20/2001	Zachary Gillman	GIL-3	1517

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EXAMINER

TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

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DATE MAILED: 12/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,682

Applicant(s)

GILLMAN ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Election/Restrictions

1. Applicant's election without traverse of Group I, claims 1, 2 in Paper No. 9 is acknowledged.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the cascading pigment" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 2, line 4, a phrase "a grain size of not less than of 0.8 **mm**" renders the claim indefinite because iron oxide having particle size of more than 0.8 **mm** is not a *powder*.

For examining purposes the phrase was interpreted according to specification as filed (See page 4, line 8) as -- a grain size of not less than of 0.8 **microns** --.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1, 2** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jungk (US 4,946,505) in view of Pirtle et al (US 6,384,126) and Leon et al (US 4,409,171).

Jungk disclose a process for preparing compacted pigment granules (See column 2, lines 63-67) by means of conventional rotating pelletizing mixer such as Eirich mixer wherein a pigment powder such as iron oxide powder (See column 1, lines 29, 32-40; column 3, lines 21-22) is fed via a screw conveyor, and a solution of a water-soluble binder such as polyhydroxy polymers (See column 3, lines 42-46) in water (See column 3, line 59) are delivered in *drops* (i.e. by spraying) to the plate; and the resulting compacted pigment granules having a size of about 1 mm are separated via an *overflow* (cascading pigment powder) and then dried (See column 3, lines 52-61).

Jungk fails to teach that: (i) a water-soluble polyhydroxy binder is polyvinyl alcohol; (ii) the pigment powder size is not less than 0.8 microns, and a pigment powder of sub-micron size is compacted before mixing with a solution of a binder (Claim 2); (iii) a liquid binder and water are loaded at 15-20 °C and the granules are dried at 50-100 °C for 2-3 hours using hot air of 200-600 °C while rotating the mixer; (iv) various process parameters such as rotating the mixer with the pigment powder of sub-micron size for 0.5-2.0 hours for compacting the pigment powder to pigment granules of 0.30-1.20 mm diameter before mixing them with a solution of a binder, the solution concentration of the binder being of 2.5-15 kg/200-850 liters; rotating the mixer at a speed of 1-25 rpm; spraying the solution of the binder at a rate of 40-200 liters per hour for 1-4 hours to result in granules having the moisture content of 10-14% before drying and less than 2% after drying.

As to (i), Pirtle et al teach that a water-soluble *polyvinyl alcohol* optionally in the presence of colloidal silica when used as a binder in a process of making iron oxide pellets provides the iron

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oxide pellets with the mechanical strength properties required for handling and transporting (See column 6, lines 23-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used polyvinyl alcohol as a water-soluble polyhydroxy binder in a process of Jungk for preparing compacted iron oxide granules with the expectation of providing the iron oxide granules with the desired mechanical strength properties required for handling and transporting, as taught by Pirtle et al.

As to (ii) and claim 2, Leon et al teach that two types of apparatus are conventionally employed in the preparation of pelleted powders. One type is basically a rotating drum having an inlet end and a discharge end. The "fluffy" powder of sub-micron size, which may or **may not** be prewettted with water or other pelletizing agents, is charged into the inlet end of the drum and is caused to tumble about therein, thereby to coalesce the minute particles thereof into larger rounded agglomerates or pellets (See column 2, lines 8-18). Leon et al further teach that it is difficult to achieve compacted granules of good uniformity using powders of sub-micron particle size since it is difficult to control the flow of sub-micron particles to a rotating mixer (See column 2, lines 65-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have compacted a pigment powder of sub-micron size in a process of Jungk before spraying them with a solution of a binder with the expectation of coalescing the sub-micron powder into larger agglomerates and thereby achieving compacted pigment granules with desired good uniformity, as taught by Leon et al.

As to (iii), it is well known in the palletizing art that generally a powder is mixed with a *liquid* binder at ambient temperature, and drying of compacted granules is carried out either in a

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rotating mixer using hot gas or in other suitable apparatus, as evidenced by Vargiu et al (US 4,221,829, column 3, lines 5-10, 28-37). In other words, drying compacted granules in a rotating mixer is functionally equivalent to drying the granules in other suitable apparatus, as evidenced by Vargiu et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have mixed a pigment powder with a *liquid* binder at ambient temperature and dried compacted granules in a process of Jungk in a rotating mixer using hot gas since it is well known in the palletizing art that generally a powder is mixed with a *liquid* binder at ambient temperature, and drying compacted granules in a rotating mixer is functionally equivalent to drying the granules in other suitable apparatus, as evidenced by Vargiu et al, so that the selection of any of these known methods would be within the level of ordinary skill in the art.

As to (iv), it is well known in the art that concentration and time limitations are result-effective parameters in a coating process. Also, it is well known in the pelletizing art that granules of predetermined size, e.g., of 1 mm, can be made using rotating mixers having different shape of blades, their size and inclination so that specific process parameters would depend on particular rotating mixer used; for the same mixer, the size of the pellets depends on the residence time in the pelletizing mixer, on water content in the binder solution, and rotation speed, as evidenced by Paersch et al (See column 4, lines 20-30), e.g., the lower the rotating speed the larger particles, as evidenced by JP 358087195 (See Abstract). In other words, claimed parameters of (iv) are *result-effective variables* in a process for making compacted pigment granules.

It is held that it is not inventive to discover the optimum or workable ranges of result-effective variables by routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant parameters (including those of (iv) in a process of Jungk through routine experimentation depending on intended use of a final product in the absence of showing criticality.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (703) 605-1171. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Elena Tsoy

Elena Tsoy
Examiner
Art Unit 1762

December 24, 2002